

REMARKS

Independent claims 4 and 17 have been amended to recite the liquid adjunct as comprising a cereal sugar. Page 7, lines 5-7 of the specification describe the liquid adjunct as comprising, among other things, maltose, which is present in malt barley, a cereal. (See the attached excerpt from Hawley's Condensed Chemical Dictionary, Twelfth Edition). Thus, the specification provides a basis for the amendment. New dependent claims 21 and 23 recite the liquid adjunct as comprising maltose as at page 7, line 7 of the specification, and new dependent claims 22 and 24 recite the liquid adjunct as comprising dextrose, maltose and maltotriose as at page 7, line 7 of the specification.

In the Office Action, claims 4, 5, 7, 16, 17, 19 and 20 were rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 4,329,433 to Seebeck *et al.* ("Seebeck") in view of U.S. Patent No. 6,265,000 to Shimamura *et al.* ("Shimamura") and in further view of Applicants' specification.

Turning to the cited patents, Seebeck discloses a continuous fermentation method for solutions such as grape juice. The yeast is first aerobically cultured in a nutrient solution and when the yeast reaches a certain concentration level, a fermentation media is continuously added to the cultured yeast for continuous fermentation. Nothing in Seebeck discusses aerating yeast suspended in a wort-free aqueous solution comprising liquid adjunct including a cereal sugar as recited in amended independent claims 4 and 17. Throughout the Seebeck patent, the nutrient solution is described as preferably being a fruit juice and the fermentation media is described as preferably being a fruit juice. In particular, the Examples of Seebeck use fruit juices as the nutrient solution and the fermented solution.

Shimamura teaches the production of a beer like product where the yeast can be cultured in moto or a wine must (the "yeast-containing output" of Shimamura). However, Shimamura does not teach aerating the "yeast-containing output".

Therefore, neither Seebeck or Shimamura teaches aerating yeast suspended in a wort-free aqueous solution comprising liquid adjunct including a cereal sugar as recited in amended independent claims 4 and 17. The use of a cereal sugar, such as maltose, in the liquid adjunct provides for advantages when producing beer. For example, if the fruit juices of Seebeck and Shimamura were to be added to wort, the final product will not have a flavor profile of beer due to the fruit juice. In contrast, the use of liquid adjunct comprising a cereal sugar such as maltose will produce a final product having the flavor profile associated with beer.

Accordingly, it is respectfully submitted that amended claim 4 (and claims 5, 7, 16 and 23-24 that depend thereon) and amended claim 17 (and claims 19-22 that depend thereon) are patentable over the cited references. Favorable reconsideration is respectfully requested.

Other than the three month extension, no other fees are believed to be needed for this amendment. However, if other fees are needed, please charge them to deposit account 17-0055.

Respectfully submitted,

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maleo-pimamic acid. Reaction product of maleic anhydride and 1-pimamic acid; derived from pine gum.

Properties: Crystalline solid, mp approximately 225°C, soluble in most organic solvents, insoluble in water or aliphatic hydrocarbons.
Use: Resins.

malic acid. (hydroxysuccinic acid; apple acid).
CAS: 6915-15-7. $\text{COOHCH}_2\text{CH}(\text{OH})\text{COOH}$
(Do not confuse with maleic acid.)

Properties: Colorless crystals; sour taste; d (dl-form) 1.601, (d or l form) 1.595 (20/4C); mp (dl) 128°C, (d or l) 100C; bp (dl) 150C (decomposes), (d or l) 140C (decomposes); very soluble in water and alcohol, slightly soluble in ether. Combustible.

Derivation: Occurs naturally in unripe apples and other fruits. Made synthetically by catalytic oxidation of benzene to maleic acid, which is converted to malic acid by heating with steam under pressure.

Grade: Technical, active and inactive; FCC. The natural material is levorotatory but the synthetic material is inactive.

Use: Manufacture of various esters and salts, wine manufacture, chelating agent, food acidulant, flavoring.

malonamide nitrile. See cyanoacetamide.

malonic acid. (methanedicarboxylic acid).
CAS: 141-82-2. $\text{CH}_2(\text{COOH})_2$.

Properties: White crystals, soluble in water, alcohol, and ether, mp 132–134C, bp decomposes, d 1.63.

Derivation: From monochloroacetic acid by reaction with potassium cyanide followed by hydrolysis.

Hazard: Strong irritant.

Use: Intermediate for barbiturates and pharmaceuticals.

malonic dinitrile. (malononitrile).
CAS: 109-77-3. $\text{CH}_2(\text{CN})_2$.

Properties: Colored crystals, mp 32.1C, bp 220C.

Hazard: Toxic by ingestion and inhalation.

Use: Organic synthesis, leaching agent for gold.

malonic ester. See ethyl malonate.

malonic ester synthesis. Syntheses based on the strongly activated methylene group of malonic esters, which on reaction with sodium ethoxide form a resonance-stabilized ion that can be alkylated and acylated. After hydrolysis, the free alkylmalonic acids readily decarboxylate to mono- or disubstituted monocarboxylic acids.

malonic ethyl ester nitrile. See ethyl cyanoacetate.

malonic methyl ester nitrile. See methyl cyanoacetate.

malonic mononitrile. See cyanoacetic acid.

malononitrile. See malonic dinitrile.

malonylurea. See barbituric acid.

malt. Yellowish or amber-colored grains of barley that have been partially germinated by artificial means. It contains dextrin, maltose, and amylase; characteristic odor and taste. Black malt is grain which has been scorched in the drying process.

Use: Brewing, malted milk and similar food products, extract of malt (with 10% glycerol).

maltase. (glucase; α -glucosidase). An enzyme that hydrolyzes maltose to glucose. Occurs in the small intestine, in yeast, molds, and malt; usually associated with the enzyme amylase.

malt extract. (maltine).

Properties: Light brown, sweet, viscous liquid; contains dextrin, maltose, a little glucose, and an amylolytic enzyme. It is capable of converting not less than five times its weight of starch into water-soluble sugars; soluble in cold water but more readily soluble in warm water, d greater than 1.350 and less than 1.430 (25C).

Derivation: By infusing malt with water at 60C, concentrating the expressed liquid below 60C, and adding 10% by weight of glycerol.

Use: Nutrient, emulsifying agent.

maltha. A black, viscous, natural bitumen consisting of a complex mixture of hydrocarbons. Its viscosity and rheological properties lie between those of crude oil and semisolid asphalt. It is the chief component of Athabasca oil sands.

malthenes. See petrolenes.

maltol. (3-hydroxy-2-methyl-4-pyrone).
CAS: 118-71-8. $\text{CH}_3\text{C}_5\text{H}_2\text{O}(\text{O})(\text{OH})$.

Properties: White, crystalline powder having a characteristic caramel-buttered odor and suggestive of a fruity-strawberry aroma in dilute solution. Slightly soluble in water, more soluble in alcohol and propylene glycol, melting range 160–164C.

Grade: FCC.

Use: Flavoring agent in bakery products.

maltose. (malt sugar; maltobiose).

CAS: 69-79-4. $\text{C}_{12}\text{H}_{22}\text{O}_{11} \cdot \text{H}_2\text{O}$. The most common reducing disaccharide, composed of two molecules of glucose. Found in starch and glycogen.

Properties: Colorless crystals, mp 102–103C, sol-